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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/644,759

08/21/2003

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Q77053

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23373 7590 08/08/2007
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EXAMINER

MARIAM, DANIEL G

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

08/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/644,759

Applicant(s)

YAMADA, MASAHIKO

Examiner

DANIEL G. MARIAM

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-10, 12-17, 19-21 and 25-27 is/are rejected.
- 7) ☒ Claim(s) 4, 11, 18 & 22-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

Response to Arguments

1. Applicant's arguments, see pages 9-11 of the remarks, filed on May 22, 2007, with respect to the rejection(s) of claim(s) 1-3, 5-10, 12-17, and 19-21 under 35 U.S.C. 102 (b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Dai, et al (An object based Approach to Automated Image Matching" and Bobrow (US Pat. No. 6,562,077) which will be discussed below.

Claim Suggestions

2. Claim 15 would be in better form to satisfy the 35 U.S.C. 101 requirement if written as "A computer readable medium encoded with a computer program for causing . . . " instead of "A computer readable medium including a program . . .".

Examiner's Note

3. Examiner has cited particular columns and line numbers or figures in the references as applied to the claims below for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 8, 15 and 25-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Dai, et al. (An Object-based Approach to Automated Image Matching).

With regard to claim 1, Dai, et al. discloses similarity judgment method for judging a similarity value between images related to or attached with characteristic, i.e., moment or distance, information representing a characteristic of each of objects therein (See for example, the Abstract), the similarity judgment method comprising the steps of: calculating a similarity value between the objects included in the images, based on the characteristic information (See for example, pp. 1189-1190, sections A-D); calculating the similarity value between the images, based on the similarity value between the objects (See for example, pp. 1190-1191, the section under the heading entitled Algorithm of Image Matching).

Claim 8 is rejected the same as claim 1 except claim 8 is directed to an apparatus claim. Thus, argument analogous to that presented above for claim 1 is applicable to claim 8.

Applicant's attention is further invited to page 1191, the section entitled Experimental Results

Claim 15 is rejected the same as claim 8. Thus, argument similar to that presented above for claim 8 is applicable to claim 15. As to a computer-readable medium including a program (See for example, page 1190, the section under the heading entitled Algorithm Image Match).

With regard to claim 25, the method of Claim 1, wherein the calculation of similarity value between images is for plural images stored in a database, and wherein at least two of the stored plural images are compared against each other (See for example, pp. 1190-1191, the section under the heading entitled "algorithm image match and experimental results").

With regard to claim 26, the method of claim 1, the calculation of similarity value between the objects is between objects appearing in plural images, said plural images being stored in a database (See for example, pp. 1190-1191, the section under the heading entitled “algorithm image match and experimental results”).

With regard to claim 27, the method of claim 26, wherein calculation of similarity values between objects includes similarity value calculations for multiple objects occurring in each of the plural images, and the similarity value between images is calculated between the plural images (See for example, pp. 1189-1191, sections A-D; and the section under the heading entitled “algorithm image match and experimental results”).

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 8, 15, and 25-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Bobrow, et al. (6,562,077).

With regard to claim 1, Bobrow discloses similarity judgment method for judging a similarity value between images, i.e., documents, related to or attached with characteristic, i.e., layout, structure or attribute, information representing a characteristic of each of objects therein (See for example, the Abstract and Fig. 15), the similarity judgment method comprising the steps of: calculating a similarity value between the objects included in the images, based on the

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characteristic information, calculating the similarity value between the images, based on the similarity value between the objects (See for example, col. 27, line 30 – col. 28, line 53).

Claim 8 is rejected the same as claim 1 except claim 8 is directed to an apparatus claim. Thus, argument analogous to that presented above for claim 1 is applicable to claim 8. Applicant's attention is further invited to Figures 1 and 2.

Claim 15 is rejected the same as claim 8. Thus, argument similar to that presented above for claim 8 is applicable to claim 15. As to a computer-readable medium including a program (See for example, item 116, in Fig. 1).

With regard to claim 25, the method of Claim 1, wherein the calculation of similarity value between images is for plural images stored in a database, and wherein at least two of the stored plural images are compared against each other (See for example, Figs. 1-3 and 15-16 and the associated text).

With regard to claim 26, the method of claim 1, the calculation of similarity value between the objects is between objects appearing in plural images, said plural images being stored in a database (See for example, Figs. 1-3 and 15-16 and the associated text).

With regard to claim 27, the method of claim 26, wherein calculation of similarity values between objects includes similarity value calculations for multiple objects occurring in each of the plural images, and the similarity value between images is calculated between the plural images (See for example, Figs. 1-3 and 15-16 and the associated text).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-3, 5-10, 12-17, and 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Li, et al (5,930,783).

With regard to claim 1, Li, et al discloses a similarity judgment method for judging a similarity value between images related to or attached with characteristic information, i.e., color, shape, etc, representing a characteristic of each of objects, i.e., tree, person, TV, airplane, bird, etc, therein, the similarity judgment method (See for example, 1-5, and particularly item 212) comprising the steps of: calculating a similarity value between the objects included in the images, based on the characteristic information (See for example, col. 5, line 30 –col. 5, line 65; and Figs. 1-5); calculating the (similarity value between the images), based on the similarity value between the objects (broadly reads on col. 5, line 66 – col. 6, line 54; and Tables 3 & 4). Li, et al. does not expressly call for calculating similarity between images. However, finding similarity between images based on the similarity found between the objects included in the images is well known in the art of image searching or retrieving as evidenced by Bobrow (See for example, Fig. 15 and the associated text). Li, et al. and Bobrow, et al. are combinable because they are from the same field of endeavor, i.e., image searching or retrieving graphical images (See for example, the Abstract). At the time of the invention, it would have been obvious

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to a person of ordinary skill in the art to combine the teaching of Bobrow, et al. with Lin, et al. The motivation for doing so would enable the system of Li, et al. match the images on the basis of similarity found between the objects. Therefore, it would have been obvious to combine Bobrow, et al with Li, et al. to obtain the invention as specified in claim 1.

With regard to claim 2, the similarity judgment method according to claim 1, wherein the characteristic information is included in metadata of image data representing the images (See for example, col. 6, lines 49-51).

With regard to claim 3, the similarity judgment method according to claim 1, wherein the characteristic information refers to at least one of items comprising a candidate of the name of each of the objects, a reliability value representing likelihood of each of the objects having the name, position information representing a position of each of the objects in a corresponding one of the images, size information representing a size of each of the objects, and a statistic value regarding characteristic quantities of each of the objects (See for example, Table 4).

With regard to claim 5, the similarity judgment method according to claim 1, further comprising the step of storing the images by classifying the images according to the similarity value between the images (See for example, Table 4).

With regard to claim 6, the similarity judgment method according to claim 5, further comprising the step of sequentially outputting the stored images according to the similarity value between the images (See for example, Fig. 14).

With regard to claim 7, the similarity judgment method according to claim 6, further comprising the steps of: storing the images by further classifying the images according to the

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similarity value between the objects included in the images, and sequentially outputting the stored images according to the similarity value between the objects in the images (See for example, Table 4 and Fig. 14 respectively).

Claims 8, 9, 10, 12, 13, and 14 are rejected the same as claims 1, 2, 3, 5, 6, and 7 respectively, except claims 8, 9, 10, 12, 13, and 14 are directed to apparatus claims. Thus, arguments analogous to those presented above for claims 1, 2, 3, 5, 6, and 7 are respectively applicable to claims 8, 9, 10, 12, 13, and 14.

Claims 15, 16, 17, 19, 20, and 21 are rejected the same as claims 1, 2, 3, 5, 6, and 7 respectively. Thus, arguments analogous to those presented above for claims 1, 2, 3, 5, 6, and 7 are respectively applicable to claims 15, 16, 17, 19, 20, and 21.

Allowable Subject Matter

10. Claims 4, 11, 18 and 22-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL G. MARIAM whose telephone number is 571-272-7394. The examiner can normally be reached on M-F (7:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MATTHEW BELLA can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


DANIEL G MARIAM
Primary Examiner
Art Unit 2624

August 6, 2007